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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,842	01/15/2002	Ronald P. Doyle	RSW920010182US1	5659

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EXAMINER

LU, KUEN S

ART UNIT

PAPER NUMBER

2167

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/047,842

Applicant(s)

DOYLE ET AL.

Examiner

Kuen S Lu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. The Action is responsive to the Applicant's Amendments, filed on March 21, 2005.
2. In responding to Applicant's Amendments made to the claims, the Examiner has created this Office Action for non-Final Rejection (hereafter "the Action") as shown next.
3. As for the Applicant's Remarks on claim rejections, filed on March 21, 2005, has been fully considered by the Examiner, please see discussion in the section **Remarks**, following the Action.

**Claim Rejections - 35 USC § 102**

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-21 are rejected under 35 U.S.C. 102(e) as anticipated by Amer et al.

(Noah: Low-cost file access prediction through pairs, Amer et al., IEEE, 2001, hereafter "Noah").

As per Claims 1, 20 and 21, Noah teaches the following:

“storing content in a computing network” (See Page 27 at Paragraph 1. Introduction: wherein Noah’s shipping data on the network if requested data is not available locally is equivalent to Applicant’s storing content in a computing network);

“receiving hints that comprise an indication of anticipated relationships among files” (See Fig. 3 and Page 29, Paragraph 2.3. Noah model: wherein Noah’s tracking of current prediction and dynamic/last-successor is the algorithm to predict accurate successor files is equivalent to Applicant’s receiving hints that comprise an indication of anticipated relationships among files); and

“using the received hints to allocate storage for the files” (See Fig. 3 and Page 30, Paragraph 3. Experimental Results: a successor to a particular file is observed to be consistent with what Noah predicted is considered the successful predicted file is equivalent to Applicant’s using the received hints to allocate storage for the files).

As per claim 2, Noah teaches “the hints are created by a content management system” (See Fig. 3 and Page 27, Paragraph 1. Introduction: wherein Noah’s Noah model predicts accurately and the model is useful to system and data management with low system overheads to perform is equivalent to Applicant’s the hints are created by a content management system).

As per claim 3, Noah teaches the following:

“storing content in a computing network” (See Page 27 at Paragraph 1. Introduction: wherein Noah’s shipping data on the network if requested data is not available locally is equivalent to Applicant’s storing content in a computing network);

“receiving hints that comprise an indication of anticipated relationships among files” (See Fig. 3 and Page 29, Paragraph 2.3. Noah model: wherein Noah’s tracking of current prediction and dynamic/last-successor is the algorithm to predict accurate successor files is equivalent to Applicant’s receiving hints that comprise an indication of anticipated relationships among files);

“using the received hints to allocate storage for the files” (See Fig. 3 and Page 30, Paragraph 3. Experimental Results: a successor to a particular file is observed to be consistent with what Noah predicted is considered the successful predicted file is equivalent to Applicant’s using the received hints to allocate storage for the files); and

“wherein the hints specify one or more files that are likely to be referenced within a temporal proximity of a reference to a selected one of the files” (See Fig. 4 and Page 31, Paragraph 3.1. Noah and Optimal Pairing: wherein Noah’s static successor file predictions remain valid for extended periods of time and expected the validity to lessen as lengthier time periods are involved, **is equivalent to Applicant’s** wherein the hints specify one or more files that are likely to be referenced within a temporal proximity of a reference to a selected one of the files).

As per Claim 4, Noah further teaches “the selected file is a web page” (See Page 32, Paragraph 4. Related Work: wherein Noah’s implementation of web-proxies and file

caches, and successor could potentially be any file in the file system space suggests the Noah model is able to handle web page because it is also a file accessible by users is equivalent to Applicant's the selected file is a web page).

As per claim 5, Noah teaches "the one or more files comprise at least one of (1) one or more embedded objects of the web page and (2) one or more other web pages which are hyperlinked to the web page" (See Page 32, Paragraph 4. Related Work: wherein Noah's implementation of web-proxies and file caches, and successor could potentially be any file in the file system space suggests the Noah model is able to handle web page because it is also a file accessible by users suggests teaching of Applicant's disclosure that the one or more files comprise at least one of (1) one or more embedded objects of the web page and (2) one or more other web pages which are hyperlinked to the web page).

As per claim 6, Noah teaches the following:

"storing content in a computing network" (See Page 27 at Paragraph 1. Introduction: wherein Noah's shipping data on the network if requested data is not available locally is equivalent to Applicant's storing content in a computing network);

"receiving hints that comprise an indication of anticipated relationships among files" (See Fig. 3 and Page 29, Paragraph 2.3. Noah model: wherein Noah's tracking of current prediction and dynamic/last-successor is the algorithm to predict accurate

successor files is equivalent to Applicant's receiving hints that comprise an indication of anticipated relationships among files);

"using the received hints to allocate storage for the files" (See Fig. 3 and Page 30, Paragraph 3. Experimental Results: a successor to a particular file is observed to be consistent with what Noah predicted is considered the successful predicted file is equivalent to Applicant's using the received hints to allocate storage for the files);

"wherein the hints are created by a content authoring tool" (See Fig. 3 and Page 27, Paragraph 1. Introduction: wherein Noah's Noah model predicts accurately and the model is useful to system and data management with low system overheads to perform is equivalent to Applicant's wherein the hints are created by a content authoring tool); and;

"wherein the hints specify one or more files that are likely to be referenced within a temporal proximity of a reference to a selected one of the files" (See Fig. 4 and Page 31, Paragraph 3.1. Noah and Optimal Pairing: wherein Noah's static successor file predictions remain valid for extended periods of time and expected the validity to lessen as lengthier time periods are involved, **is equivalent to Applicant's** wherein the hints specify one or more files that are likely to be referenced within a temporal proximity of a reference to a selected one of the files).

As per claim 7, Noah further teaches "the selected file is a text document" (See Page 32, Paragraph 4. Related Work: wherein Noah's using semantic distance to evaluate

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groups of files, and successor could potentially be any file in the file system space suggests the teaching of Applicant's disclosure that the selected file is a text document).

As per claim 8, Noah teaches "the one or more files comprise one or more objects which are embedded within or referenced by the text document" (See Page 32, Paragraph 4. Related Work: wherein Noah's using semantic distance to evaluate groups of files, and successor could potentially be any file in the file system space suggests the teaching of Applicant's disclosure that the one or more files comprise one or more objects which are embedded within or referenced by the text document).

As per claim 9, Noah teaches "the hints further specify weights which describe a degree of dependency for the relationships" (See Page 31, Paragraph 3.2. Noah, FMO, and PCM: wherein Noah's file access prediction is based on the construction of weighted relationship is equivalent to Applicant's the hints further specify weights which describe a degree of dependency for the relationships).

As per claim 10, Noah teaches "the receiving step is performed by a file system and the using step is performed by a storage system" (See Page 32, Paragraph 4. Related Work: wherein Noah's successor could potentially be any file in the file system space, and Page 27, Paragraph 1. Introduction: wherein Noah's accurate access predictors are very desirable for data storage system suggests teaching of Applicant's disclosure that



the receiving step is performed by a file system and the using step is performed by a storage system).

As per claim 11, Noah teaches “the hints are encoded in a markup language notation” (See Page 32, Paragraph 4. Related Work: wherein Noah’s implementation of web-proxies and file caches, and successor could potentially be any file in the file system space suggests teaching of Applicant’s disclosure that the hints are encoded in a markup language notation).

As per claim 12, Noah teaches “the markup language notation is Extensible Markup Language, XML, notation” (See Page 32, Paragraph 4. Related Work: wherein Noah’s implementation of web-proxies and file caches, and successor could potentially be any file in the file system space suggests teaching of Applicant’s disclosure that the markup language notation is Extensible Markup Language, XML, notation).

As per claim 13, Noah further teaches the following:

“receiving a request for one of the files” (See Fig. 3 and Page 29, Paragraph 2.3. Noah model: wherein Noah’s tracking of current prediction and dynamic/last-successor is the algorithm to predict accurate successor files is equivalent to Applicant’s is equivalent to Applicant’s receiving a request for one of the files);

“retrieving the requested file from the allocated storage” (See Page 32, Paragraph 4. Related Work: wherein Noah’s successor could potentially be any file in the file system

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space, and Page 27, Paragraph 1: Introduction: wherein Noah's accurate access predictors are very desirable for data storage system suggests teaching of Applicant's disclosure on retrieving the requested file from the allocated storage); and "returning the retrieved file" (See Fig. 3 and Page 30, Paragraph 3. Experimental Results: a successor to a particular file is observed to be consistent with what Noah predicted is considered the successful predicted file is equivalent to Applicant's returning the retrieved file).

As per claim 14, Noah teaches the following:

"using the received hints to create dependency information which is stored by a receiver of the hints in temporary or permanent storage" (See Page 32, Paragraph 4. Related Work and Page 31, Paragraph 3.2. Noah, FMOC, and PCM: wherein Noah's implementation of web-proxies and file caches, and successor could potentially be any file in the file system space, and Noah's file access prediction is based on the construction of weighted relationship suggests teaching of Applicant's disclosure on using the received hints to create dependency information which is stored by a receiver of the hints in temporary or permanent storage); "receiving a request for one of the files" (See Fig. 3 and Page 29, Paragraph 2.3. Noah model: wherein Noah's tracking of current prediction and dynamic/last-successor is the algorithm to predict accurate successor files is equivalent to Applicant's is equivalent to Applicant's receiving a request for one of the files); and

“determining a read request strategy for the requested file by accessing the stored dependency information” (See See Page 32, Paragraph 4. Related Work and Page 31, Paragraph 3.2. Noah, FMOC, and PCM: wherein Noah’s implementation of web-proxies and file caches, and successor could potentially be any file in the file system space, and Noah’s file access prediction is based on the construction of weighted relationship suggests teaching of Applicant’s disclosure on determining a read request strategy for the requested file by accessing the stored dependency information).

As per claim 15, Noah further teaches “the read request strategy comprises determining selected ones of the files which should be pre-fetched along with a read of the requested file” (See Page 32, Paragraph 4. Related Work: wherein Noah’s pre-fetching and predictive caching is utilized to overcome latency problem suggests teaching of Applicant’s disclosure that the read request strategy comprises determining selected ones of the files which should be pre-fetched along with a read of the requested file).

As per claim 16, Noah further teaches “the step of determining selected ones further comprises comparing a dependency weight of the files to a pre-fetch threshold” (See See Fig. 3 and Page 30, Paragraph 3. Experimental Results: a successor to a particular file is observed to be consistent with what Noah predicted is considered the successful predicted file, and further at Page 31, Paragraph 3.2. Noah, FMOC, and PCM: wherein Noah’s file access prediction is based on the construction of weighted relationship

suggests the teaching of Applicant's disclosure that the step of determining selected ones further comprises comparing a dependency weight of the files to a pre-fetch threshold).

As per claim 17, Noah further teaches "the pre-fetch threshold is used to tune the pre-fetch operation" (See Page 32, Paragraph 4. Related Work: wherein Noah's pre-fetching and predictive caching is utilized to overcome latency problem suggests teaching of Applicant's disclosure that the pre-fetch threshold is used to tune the pre-fetch operation).

As per claim 18, Noah teaches the following:

"retrieving the requested file from the allocated storage" (See Page 32, Paragraph 4. Related Work: wherein Noah's successor could potentially be any file in the file system space, and Page 27, Paragraph 1. Introduction: wherein Noah's accurate access predictors are very desirable for data storage system suggests teaching of Applicant's disclosure on retrieving the requested file from the allocated storage);

"retrieving the selected ones from the allocated storage"(See Page 32, Paragraph 4. Related Work: wherein Noah's successor could potentially be any file in the file system space, and Page 27, Paragraph 1. Introduction: wherein Noah's accurate access predictors are very desirable for data storage system suggests teaching of Applicant's disclosure on retrieving the selected ones from the allocated storage);

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“returning the retrieved file” (See Fig. 3 and Page 30, Paragraph 3. Experimental

Results: a successor to a particular file is observed to be consistent with what Noah predicted is considered the successful predicted file is equivalent to Applicant’s returning the retrieved file); and

“caching the retrieved selected ones” (See Page 32, Paragraph 4. Related Work: wherein Noah’s pre-fetching and predictive caching is utilized to overcome latency problem suggests teaching of Applicant’s disclosure on caching the retrieved selected ones).

As per claim 19, Noah further teaches “caching the retrieved requested file” (See Page 32, Paragraph 4. Related Work: wherein Noah’s pre-fetching and predictive caching is utilized to overcome latency problem suggests teaching of Applicant’s disclosure on caching the retrieved requested file).

#### 6. The prior art made of record

U. Noah: Low-cost file access prediction through pairs, Amer et al., IEEE, 2001

The prior art made of record and not relied upon is considered pertinent to applicant’s disclosure.

- A. U.S. Patent 6,169,997
- B. U.S. Publication 2002/0147734
- C. U.S. Patent 6,549,896
- D. U.S. Publication 2004/0064500

E. U.S. Patent 5,918,229

F. U.S. Publication 2002/0174267

***Remarks***

7. The Applicant's arguments filed on March 21, 2005 have been considered but they are moot on new grounds of rejection.


**Conclusions**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad Ali whose telephone number is (571) 272-4105. The examiner can normally be reached on Monday-Thursday (7:30 am-6:00 pm). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for Page 13 published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)

Kuen S. Lu  
  
Patent Examiner

May 14, 2005

  
Mohammad Ali  
Primary Examiner

May 14, 2005